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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,547	11/13/2003	Teruaki Yogo	2486-000001	9176

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EXAMINER	
CABRERA, ZOILA E	
ART UNIT	**PAPER NUMBER**
2125	

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/712,547	YOGO ET AL.	
	Examiner	Art Unit	
	Zoila E. Cabrera	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,8,10-12 and 16-32* is/are pending in the application.

4a) Of the above claim(s) *5,7,9 and 13-15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,8,10-12 and 16-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *13-15* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *12/22/05*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Final Rejection

1. Claims 1-4, 6, 8, 10-12 and 16-30 are remained for consideration.

New claims 31-32 have been added.

Claims 5, 7, 9, 13-15 have been withdrawn.

Election/Restrictions

2. Applicant's election of Group I, Claims 1-12, 16-30 in the reply filed on September 28, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

This application contains claims 13-15 drawn to an invention nonelected with traverse. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 6, 8, 10-12 and 16-32 are rejected under 35 U.S.C. 102(e) as being anticipated by **Sullivan et al. (US 5,309,365)** in view of **Tessarolo et al. (US 6,328,949).**

Regarding claim 1, **Sullivan** discloses a system for creating a custom fit, three-dimensional artificial fingernail wherein a portion of the artificial fingernail at least semi-rigidly retains a shape that substantially matches a top surface of a natural fingernail (Fig. 1; Col. 3, lines 16-25), the system comprising:

- a measuring system operably measuring a three-dimensional topography of a natural fingernail (Col. 3, lines 46-67);

  a design system for designing the three-dimensional shape of the artificial fingernail by offering the selection of parameters comprising length, and three dimensional style, of the artificial fingernail (Fig. 6a; Col. 5, line 57 to Col. 6, line 4); and a machining device operably creating the artificial fingernail using the three-dimensional design of the artificial fingernail (Col. 6, lines 4-24), the artificial fingernail at least semi-rigidly retaining a shape that substantially matches a top surface of a natural fingernail (Col. 6, lines 22-24 and lines 28-30).

As for claims 4 and 6 **Sullivan** discloses,

- the measuring system converts the three-dimensional topography of the natural fingernail into a machine code for the machining device (Col. 4, lines 24-36; Fig. 1, NC converter; Digitizer);
- the machining device is a computer numerical control device for receiving machine data for milling a material into the artificial fingernail (Fig. 1; Col. 4, lines 22-36))

As for claims 8 and 11-12, **Sullivan** discloses,

- A system for creating a customized three-dimensional artificial fingernail with a measured fit to a natural fingernail, the system comprising: a measuring device for recording data of the natural fingernail (Col. 3, lines 46-47); a measuring and design system for receiving the recorded data and calculating x, y, and z coordinates for the natural fingernail (Col. 3, lines 46-67) and designing in three dimensions the artificial fingernail wherein at least a portion of the artificial fingernail will fit the natural fingernail (Col. 4, lines 22-36; Col. 5, lines 41-56) wherein the design of the artificial fingernail will be converted into machine data (Fig. 1, NC Converter; Digitizer; Col. 5, line 57- Col. 6, line 8; Col. 6, lines 22-25 and lines 28-30); and a machining device for receiving the machine codes and machining the artificial fingernail (Fig. 1, milling tool 18; NC converter 56);
- the machining device is a computer numerical control device for receiving machine data for milling a material into the artificial fingernail (Fig. 1, milling tool 18; Col. 4, lines 22-36)
- the machine data are machine codes and the machining device is a computer numerical control device (Fig. 1, NC Controller).

As for claims 16-18, **Sullivan** discloses,

- A process for creating a custom fit, three-dimensional artificial fingernail for use with a natural fingernail comprising: recording x, y, and z data points of substantially the entire surface of the natural fingernail (Col. 3, lines 46-67) and forming the artificial fingernail using the three-dimensional topography of the

natural fingernail to create a custom fit of the artificial fingernail on the natural fingernail (Fig. 1; Col. 4, lines 22-36; Col. 5, lines 41-56);

- 17. converting the three-dimensional topography of the natural fingernail into machine data for the machining device (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25);
- 18. converting the x, y, and z data points of the natural fingernail into machine data for the machining device (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25).

Regarding claims 19-22, **Sullivan** discloses,

- 19. A process for custom designing an artificial fingernail for use with a natural fingernail, the process comprising the steps of: calculating x, y, and z data points of the natural fingernail with a measuring system (Col. 3, lines 46-67);

  selecting parameters for the artificial fingernail, wherein the parameters selected comprise, length, and style (Col. 5, lines 59-67);

  calculating a three-dimensional shape of the artificial fingernail from the x, y, and z data points of the natural fingernail and the parameters for the artificial fingernail (Col. 5, line 41- Col. 6, line 24; Col. 3, line 46 to Col. 4, line 36); and machining the artificial fingernail wherein the artificial fingernail custom fits the natural fingernail (Col. 4, lines 22-36; Col. 5, lines 51-56; Col. 6, lines 22-24 and lines 27-30);

- 20. converting the three-dimensional shape of the artificial fingernail into a machine data for the machining of the artificial fingernail (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25);
- 21. the machine data are machine codes (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25);
- 22. displaying the three-dimensional shape of the artificial fingernail before the step of machining the artificial fingernail (Fig. 7; Col. 5, lines 59-67);

As for claims 23-24, **Sullivan** further discloses,

- 23. A computer implemented process for designing custom artificial fingernails for fitting a natural fingernail, the process comprising the step of: receiving from a device data defining a surface of a finger comprising a surface of a natural fingernail (Col. 3, lines 46-67); selecting a design for the artificial fingernail (Col. 5, lines 59-68); creating a three-dimensional data structure for the artificial fingernail wherein the data structure comprises x, y, and z data points that defines the surface of the natural fingernail and the design for the artificial fingernail (Col. 5, line 41- Col. 6, line 24; Fig. 7; Col. 3, lines 46-68); and converting the three-dimensional data structure into machine data for cutting the artificial fingernail out of a material (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25).

As for claims 25-28, **Sullivan** discloses,

- selecting a design for the artificial fingernail further comprises the steps of: selecting a length of the artificial fingernail; selecting a thickness of the artificial fingernail; and selecting a style of the artificial fingernail (Col. 5, lines 33-45 and line 59 to Col. 6, line 7);
- defining a top surface of the artificial fingernail wherein a portion of the top surface corresponds to the boundary of the surface of the natural fingernail; defining a length of the artificial fingernail; defining a thickness of the artificial fingernail; and defining a style of the artificial fingernail (Col. 5, lines 28-68);
- the three-dimensional data structure is converted into machine codes readable by a computer numerically controlled device for cutting the artificial fingernail out of the material (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25);
- the machine data are machine codes suitable for a computer numerically controlled machine (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25).

As for claim 29, the same citations applied to claim 23 above apply as well for this claim.

As for claims 30-32, **Sullivan** discloses,

- the machine data are machine codes suitable for a computer numerically controlled machine (Fig. 1, NC Converter; Digitizer; Col. 3, lines 16-25).
- An artificial fingernail manufactured by the system of claim 1 (Col. 6, lines 20-25);
- An artificial fingernail manufactured by the process of claim 16 (Col. 6, lines 20-25).

Sullivan discloses most of the limitations as described above including a measuring system (Fig. 1, Digitizer). However, **Sullivan** fails to disclose **the non-contact** measuring system for scanning a body part (please note that body part corresponds to a fingernail) as claimed in claims 1, 2-4, 8, 10, 16-19 and 23-24. But **Tessarolo** discloses such limitations as follows:

As for claim 1,

- a non-contact measuring system operably measuring a three-dimensional topography of a natural *body part*, the measuring system comprising a light source and a camera (Fig 7, step 1; Col. 4, lines 6-9).

As for claims 2-4, **Tessarolo** discloses,

- the light source projects a pattern on the natural *body part*, the camera records a two-dimensional grid image of the natural *body part* and the design system calculates x, y, and z coordinates of the natural *body part* topography (Fig. 8, step 1; Col. 3, line 55 – Col. 4, line 13, it is inherent that a scanner includes a white light);
- the light source is a laser, and the non-contact measuring system scans the natural *body part* and calculates the three-dimensional topography of the natural *body part* (Col. 3, lines 53-55);
- a non-contact measuring system (Col. 3, lines 53-55)

As for claims 8 and 10,

- a non-contact optical measuring device for projecting a grid on a natural *body part* and recording a two-dimensional grid image of the natural *body part* (Fig. 7,

step 1); a measuring and design system for receiving the two-dimensional grid image of the natural *body part* (Col. 3, lines 64-67);

- the optical measuring device comprises a laser wherein the optical measuring device scans the *body part* and calculates the three-dimensional topography of the natural *body part* (Col. 4, lines 5-9).

As for claims 16-18

- recording x, y, and z data points of a surface in a non-contact manner, at least in part through non-contact sensing (Col. 4, lines 5-9);
- photographing a natural *body part* grid image with a camera wherein the light source is a white light for projecting a two-dimensional grid onto the natural *body part* (Col. 3, line 53 – Col. 4, line 8, a scanner includes a camera); converting the two-dimensional grid image into the three-dimensional topography of the natural *body part* (Col. 5-36);
- 18. scanning the natural *body part* with a laser for calculating x, y, and z data points (Col. 3, lines 53-55).

As for claim 19,

- calculating x, y, and z data points of the natural *body part* with a non-contact measuring system (Col. 4, lines 5-9).

As for claims 23-24,

- designing custom artificial *body parts* based on an optical image of the natural *body part* (Col. 3, line 64- Col. 4, line 9);

receiving from an optical imaging device image data defining a surface of a *body part* comprising a surface of a natural *body part* (Col. 3, line 64- Col. 4, line 9);

extracting from the image data a portion of image data that defines the surface of the natural *body part* (Col. 4, lines 8-36);

- 24. the image data defines a surface of a plurality of *body parts* comprising a plurality of surfaces of natural *body parts* (Col. 3, lines 64-67).

Therefore, it would have been obvious to a person of the ordinary skill in the art at the time the invention was made to combine the system for cutting artificial nail tips using a digitizer as taught by **Sullivan** with the scanning system for scanning fingernails as taught by **Tessarolo** because it would provide an accurate digitized nail image of a nail top surface which can be displayed by a computer and can be imported into graphics for further processing (Col. 3, lines 64-67).

Conclusion

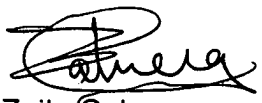
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Sachdeva** et al. (US 6,464,496) teaches a method and apparatus for scanning teeth or body part used for customizing accurate body parts and thereafter sending the digital information to a manufacturing center (Fig. 2).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zoila E. Cabrera whose telephone number is 571-272-3738. The examiner can normally be reached on M-F from 8:00 a.m. to 5:30 p.m. EST (every other Friday).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.



Zoila Cabrera
Patent Examiner
December 22, 2005